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(71)Applicant : HITACHI TOOL ENGINEERING LTD

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(54) HARD FILM COATED TOOL

(57)Abstract:

PROBLEM TO BE SOLVED: To meet a dry and high speed cutting by improving oxidation resistance without degrading abrasion resistance and adhesion of a conventional TiAlN film.

SOLUTION: A base material is made of one of high speed steel, cemented carbide, cermet, and ceramics. A (a) layer is made of one of nitride, carbonitride, oxynitride, and oxycarbonitride composed in metal atomic % of 10 to 60% of Si, less than 10% of one or more of B, Al, V, Cr, Y, Zr, Nb, Mo, Hf, Ta, and W, and Ti as remainder, and has Si₃N₄ and Si existing in a compound as an independent phase. A (b) layer is made of one of nitride, carbonitride, oxynitride, and oxycarbonitride composed in metal atomic % of 40 to 75% of Al, less than 10% of one or more of B, Si, V, Cr, Y, Zr, Nb, Mo, Hf, Ta, and W, and Ti as remainder. One or more of the (a) and (b) layers are alternatively coated. A (c) layer which is made of nitride containing Ti as a main metallic composition and has a layer thickness of 0.1 to 1 μm is laid directly on the base material surface, and the (b) layer on the (c) layer.

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